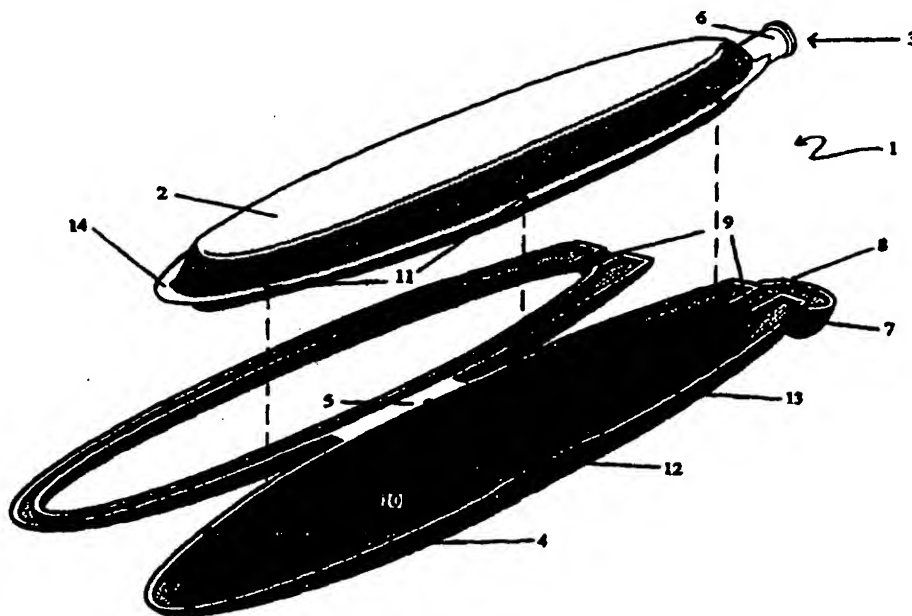




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(21) International Application Number: PCT/AU97/00357 (22) International Filing Date: 6 June 1997 (06.06.97) (30) Priority Data: PO 0285 6 June 1996 (06.06.96) AU (71) Applicants (for all designated States except US): BLACK-MORES LIMITED [AU/AU]; 23 Roseberry Street, Balgowlah, NSW 2093 (AU). THE ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY [AU/AU]; 124 Latrobe Street, Melbourne, VIC 3000 (AU). (72) Inventors; and (75) Inventors/Applicants (for US only): ARMSTRONG, Mark [AU/AU]; 47 William Street, Paddington, NSW 2021 (AU). RYAN, Chris [AU/AU]; Centre for Design at RMIT, 360 Swanston Street, Melbourne, VIC 3000 (AU). LEWIS, Helen [AU/AU]; 160 Albert Street, Port Melbourne, VIC 3002 (AU). TOMKIN, Douglas [AU/AU]; University of Technology Sydney, Building 6, Level 6, 702-730 Harris Street, Ultimo, NSW 2007 (AU). (74) Agent: ROBERTS, Mark; Davies Collison Cave, Level 10, 10 Barrack Street, Sydney, NSW 2000 (AU).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published With international search report.	

(54) Title: FLEXIBLE POUCH PACKAGING SYSTEM



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(57) Abstract

A product packaging system comprises a flexible pouch (2) with a sealable opening (3) and a rigid frame (4) releasably receiving the pouch in order to provide the pouch with rigid support. The frame comprises two portions and the releasable receiving of the pouch within the frame is by engagement of the frame portions with the pouch about a border portion of the pouch. The frame portions may be hingeably attached by a hinge (5) or may comprise integers which slide together. One or both frame portions have an opening to allow a person to deform the pouch for dispensing of the product.

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FLEXIBLE POUCH PACKAGING SYSTEM**FIELD OF THE INVENTION**

The present invention relates to a product packaging system and in particular to a product
5 packaging system which relative to those which are known to date, is associated with a
reduced negative environmental impact.

BACKGROUND ART

Due to the quite recent acknowledgement of the enormous environmental problems which
10 mankind has created we are being forced as a society to reassess each of our activities in
relation to their environmental impact. In the past our wastes have been disposed of in
basically three ways, that is by letting them flow into the sea, by burning them or by placing
them in landfill. It is now readily recognised however that each of these traditional waste
15 disposal activities is involved with negative environmental impacts. For example burning
results in the emission of noxious gases and carbon dioxide which contributes to the
greenhouse effect. Allowing wastes to flow into the oceans results in polluted water which
can adversely affect marine life, and landfill is not only unsightly and damages the natural
habitat of the land utilised, but can also result in the leaching of dangerous chemicals into
20 the soil and ground water. Clearly, other approaches to waste disposal must be found and
governments accordingly are starting to legislate in order to more tightly control the nature
of the wastes which our society produces.

One enormous area of wastes which our society produces is in product packaging, and there
is now a concerted effort taking place to develop product packaging which will not have
25 such adverse environmental impact; as well as systems for re-use and recycling of packaging
and packaging materials. Where hygiene permits, many industries are instituting
programmes to refill and re-use old containers, and in other cases new product materials are
being chosen which can readily and economically be broken down and reformed into new
containers or other products. There has also been some attention given to the development
30 of product materials which are readily biodegradable into inert and non-toxic materials.

Some examples of these approaches are the washing and re-use of glass bottles for soft drinks, the use of plastics such as HDPE or PET in bottles for drinks, detergents, etc. (which plastics can then be recycled and formed into new containers or other items such as for example plant pots).

5

In order to minimise wastes as well as minimizing the energy requirements for formation of packaging, there has been a recent move towards the adoption of lightweight, flexible sachet type packages. Such packages can be manufactured from standard laminated film comprising polyester, metallized polyester and linear low density polyethylene (LLDPE).

10 This type of packaging has been adopted for numerous types of products, and especially for drinks and detergent type products. There are however, problems associated with this type of product packaging in that due to the flexibility of the container there is often difficulty associated with handling and dispensing the product.

15 Therefore, it is an object of the present invention to provide a packaging system which requires relatively low energy consumption for its production, is lightweight and preferably recyclable but at the same time is easier to handle than flexible packaging known to date. Other objects of the present invention will become apparent from the following description thereof.

20

SUMMARY OF THE INVENTION

According to one embodiment of the present invention there is provided a product packaging system comprising a flexible pouch with a sealable opening which is adapted to contain and dispense a product, and a substantially rigid frame which is adapted to releasably receive
25 said pouch in order to provide said pouch with rigid support.

According to another embodiment of the present invention there is provided a product packaging system, as referred to above, wherein said frame comprises a seal which is adapted to interact with the opening of the pouch in order for the opening to be opened and
30 sealed.

According to a further embodiment of the present invention there is provided a product packaging system, as referred to above, wherein said frame comprises integral diametrically opposed ribs adapted to engage with the pouch about a border portion of the pouch.

5 According to a still further embodiment of the present invention there is provided a product packaging system, as referred to above, wherein said frame comprises two hingeably attached portions and wherein the releasable receiving of said pouch within said frame is by retaining at least a section of the pouch between the hingeably attached portions.

10 According to a still further embodiment of the present invention there is provided a product packaging system, as referred to above, wherein a first of said hingeably attached portions defines a rigid backing for a substantial segment of said pouch and a second of said hingeably attached portions defines a clasp which attaches about a perimeter of the first portion, with an opening within said clasp to allow a person to deform the pouch for
15 dispensing the product.

According to a still further embodiment of the present invention there is provided a product packaging system, as referred to above, wherein the pouch is manufactured from material which is either readily recyclable or biodegradable.

20

DESCRIPTION OF THE DRAWINGS

The present invention will now be described by way of example only and with reference to the drawings wherein;

25 FIG. 1 is a perspective view showing the hingeable frame in the open position and demonstrating the means by which the pouch is fitted within the frame;
FIG.2 is a perspective view as shown in Fig. 1 with one side of the frame having a back.

30

DETAILED DESCRIPTION OF THE INVENTION

As used throughout this specification, unless the context requires otherwise, the word "comprise" or variations such as "comprises" or "comprising" will be understood to imply the inclusion of a stated element or integer or group of elements but not the exclusion of any other element or integer or group of elements or integers.

It is to be clearly understood that the present invention is by no means limited to the specific example which will be described in detailed herein. There are in fact, many other possible embodiments of the present invention. For example, the specific example which will be described involves a hingeable frame which can engage about and contain a deformable and flexible pouch which is adapted to hold a product. Important features of the invention therefore are the pouch, which must be flexible, and a frame which is adapted to hold it in such a way that the contents of the pouch can be dispensed. It is also preferable that there is some means of sealing the opening of the pouch. As long as these features are present they can be arranged in any number of different manners. For instance, the frame could be comprised of integers which slide together in order to engage the pouch rather than having a hingeable attachment. There is also no limitation to the shape or size of the frame and pouch, the positioning of the hinge (if indeed there is one), or the means by which the pouch is engaged within the frame. This discussion about the various possibilities and different embodiments of the present invention will become clearer following the detailed description of one specific embodiment of the invention, which follows.

As will be noted from Fig. 1 the embodiment of the product package system 1 exemplified therein comprises a pouch 2 and a frame 4. It is important that the pouch 2 be manufactured of a flexible material in order that product contained therewithin can easily be dispensed by squeezing on the exterior surface of the pouch 2.

In a preferred embodiment of the invention, the pouch 2 is manufactured from standard laminated film materials which are well known in the art and may, for example, comprise polyester, metallized polyester and linear low density polyethylene (LLDPE). However,

it is possible that the pouch 2 can be manufactured from any impervious and flexible material which has suitable characteristics for containing the particular product concerned. For example, various plastics and polymer films are considered appropriate. Ideally, the pouch 2 will be manufactured from material which is either readily recyclable or biodegradable, and/or which is relatively light-weight (especially if it is not recyclable or biodegradable) so that it will not require a great deal of space when discarded. It is also preferable that the pouch can be easily and economically manufactured by adhesion of polymer layers or injection moulding processes which are well known in the art.

10 The pouch 2 according to the invention is equipped with a neck 6 and an opening 3. It is preferred that the opening 3 is sealed by, for example, a foil or plastic seal, prior to the first use of the product contained therewithin. It is possible, however, for the pouch 2 to have a cap which attaches about the opening 3 in order that it can be resealed after use. By way of example, if applicable the cap may be sealed by a screw threading arrangement or simply
15 by a pressure fit about either the outer periphery or the interior of the opening 3.

As shown in Fig. 1 the pouch 2 has an outer border 14 which is equipped with eyelets 11. This configuration is by no means essential to the invention, but in this example, the border 14 and eyelets 11 allow for engagement of the pouch 2 within the frame 4.

20

In the example of the product packaging system 1 shown in Fig. 1, the frame 4 comprises two portions which are attached by a hinge 5, wherein each of these portions comprises integral, diametrically opposed ribs which are rigid in their construction. At one end of each portion there is provided a groove within the rib structure that will define the throat
25 9 of the frame when the two portions are brought into engagement by closure of the hinge 5. Also shown in Fig. 1 is a cap 7 which is hingeably attached to one of the portions of the frame 4. The cap 7 is provided with a needle 8 which projects from an interior surface thereof. The cap may also include a broad, flat outer surface in order that the whole arrangement may be stood vertically upon this surface of the cap.

30

When the pouch 2 is engaged within the frame 4 and the two portions of the frame 4 are brought into alignment by closure of the hinge 5, the throat 9 of the frame 4 will enclose the neck 6 of the pouch 2 and the cap 7 will be in position to seal about the opening 3 of the pouch 2. The needle 8 has the dual purpose of perforating the original covering of the opening 3 and also aiding the sealing of the opening 3 when the cap is in the closed position.

The clasp 12 is provided to ensure that the two portions of the frame 4 can be kept closed as desired when the hinge 5 is closed and the two portions are brought into alignment. Naturally, the clasp 12 is releasable to allow the opening of the hinge 5, in order to place a pouch 2 within, or remove a pouch 2 from engagement within the frame 4.

In the embodiment of the invention shown in the figures, the pouch 2 is held within the frame 4 by means of pins 10 on the frame 4 that engage within eyelets 11 within the border 14 of the pouch 2. Naturally, the number of pins/eyelets is dependant upon the shape and size of the frame and pouch, but generally between two and eight sets of pins/eyelets will be appropriate, although there may be circumstances where a greater or lesser number of pins/eyelets are required. In fact, and as explained above, the pins/eyelets are not essential to the invention, and other means of engagement of the pouch 2 within the frame 4 can be employed, such as simply a pressure fit of the border 14 between the hingeable frame portions. Other suitable attachment means are also possible.

The frame 4 may be manufactured from any suitable material which has the necessary strength and rigidity required to carry out its function. According to one aspect of the invention however, the frame 4 of the product packaging system 1 is manufactured from a material which will be aesthetically pleasing, such as a polished plastic, a material which is metallic or at least has a metallic finish, wood, ceramic or bone etc. Such aesthetically pleasing frames will be especially suitable when the product packaging system is adapted to hold products such as cosmetics. In this way the frame 4 can be retained by the user of the product, and may even be of some value in itself as a result of the materials it is made from or the workmanship involved in its manufacture, in much the same way as a piece of

jewellery or watch. The frame 4 may even have a pattern or other ornate finish applied to it. Indeed, the frame may even be manufactured in an ornamental shape, just so long as it will receive a pouch 2 and still carry out its necessary function.

- 5 In another embodiment of the invention, and as shown in Fig. 2, one portion of the frame 4 contains a backing section 13. By having the backing section it will be easy to dispense a product from the pouch 2 when it is contained within the frame 4, simply by depressing the front portion of the pouch 2 with the fingers (and through the opening within the front portion of the frame 4), against the internal surface of the backing 13.

10

It is to be recognized that the present invention as been described by way of example only, and that various modifications and / or alterations which would be obvious to a person skilled in the art, on the basis of the teaching herein, can be made thereto without departing from the intended scope or spirit of the invention, as defined in the accompanying claims.

15

The Claims Defining the Invention are as Follows:

1. A product packaging system comprising a flexible pouch with a sealable opening which is adapted to contain and dispense a product, and a substantially rigid frame which is adapted to releasably receive said pouch in order to provide said pouch with rigid support.
2. The product packaging system as claimed in claim 1 wherein said frame comprises a seal which is adapted to interact with the opening of the pouch in order for the opening to be opened and sealed.
3. The product packaging system as claimed in either claim 1 or claim 2 wherein said frame comprises integral diametrically opposed ribs adapted to engage with the pouch about a border portion of the pouch.
4. The product packaging system as claimed in any one of claims 1 to 3 wherein said frame comprises two hingeably attached portions and wherein the releasable receiving of said pouch within said frame is by retaining at least a section of the pouch between the hingeably attached portions.
5. The product packaging system as claimed in claim 4 wherein a first of said hingeably attached portions defines a rigid backing for a substantial segment of said pouch and a second of said hingeably attached portions defines a clasp which attaches about a perimeter of the first portion, with an opening within said clasp to allow a person to deform the pouch for dispensing of the product.
6. The product packaging systems as claimed in any one of claims 1 to 5 wherein the pouch is manufactured from material which is either readily recyclable or biodegradable.

7. The product packaging system as claimed in claim 6 wherein said material is polyester, metallized polyester or linear low density polyethylene.
8. The product packaging system substantially as hereinbefore described with reference to the drawings.

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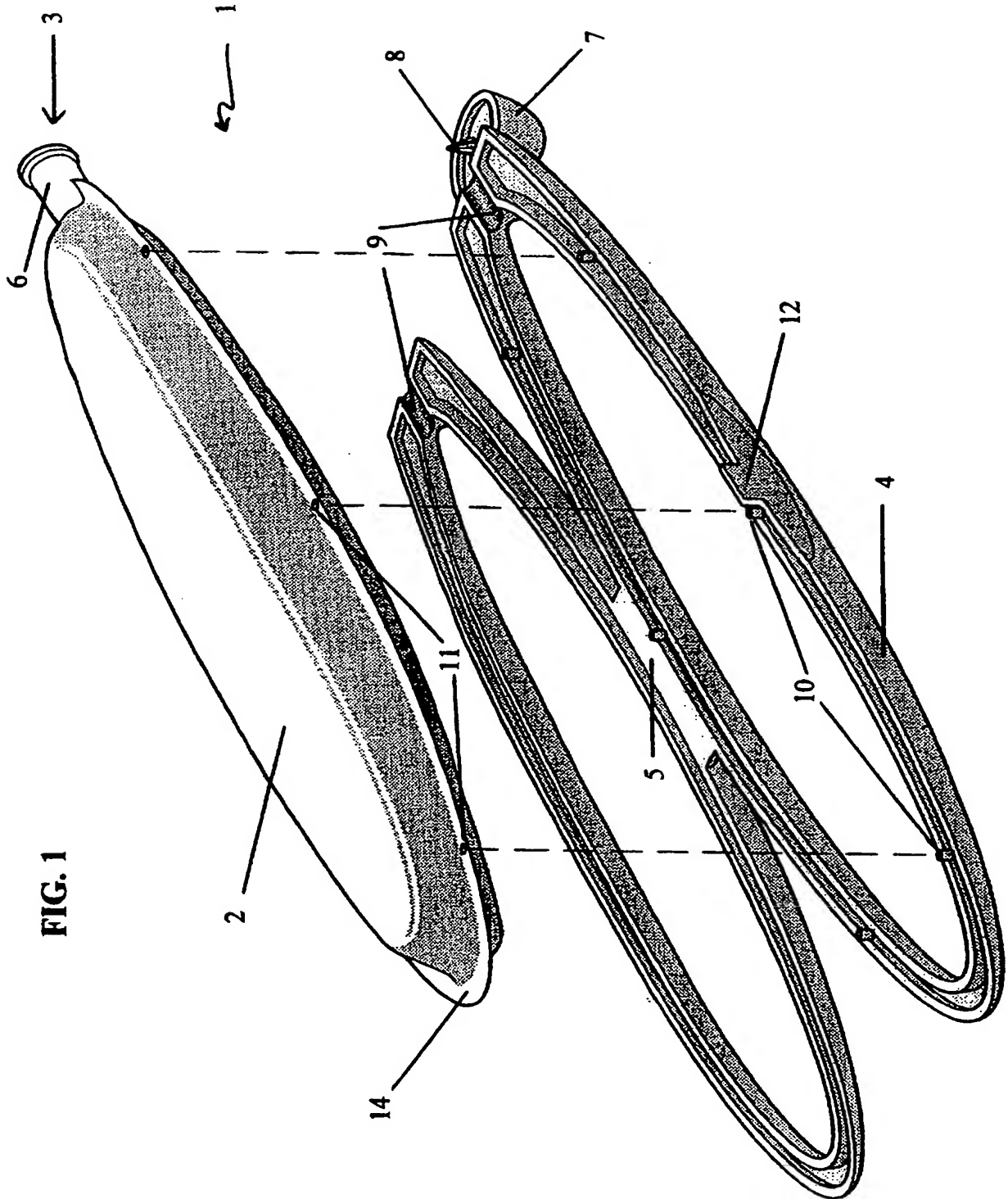


FIG. 1



INTERNATIONAL SEARCH REPORT

International Application No.
PCT/AU 97/00357

A. CLASSIFICATION OF SUBJECT MATTER

Int Cl⁶: B65D 77/06, 75/52, 35/56, 33/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC B65D: B67D; A47G, J, K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU: B65D; A47G, J, K

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPAT: B65D; B67D; A47G, J, K; A45D

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, Y	Derwent Abstract accession No. 94-151681/18, class P27, ZA 9303745 (WATT) 23 February 1994. Abstract	1-8
X	US 5429263 A1 (HAUBENWALLNER) 4 July 1995 Figs. 7-10	1,2,4,6,7
X	US 5156299 A1 (DE CALUWE) 20 October 1992 Figs. 1-6	1,2,4,6,7

☒ Further documents are listed in the continuation of Box C

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X	CH 677092 A5 (ESSILOR INTERNATIONAL) 15 April 1991 Whole document	1,4,5,6,7
X	US 5263611 A1 (TRIPPEN) 23 November 1993 Whole document	1,6,7
X	AU 70377/94 A1 (HOSOKAWA YOKO CO. LTD) 17 August 1995 Whole document	1,4,6,7
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X Y	AU 18850/20 A1 (STAFFORD) 26 July 1921 Whole document Seal/closure provided on frame	1,2,6,7 2
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Information on patent families members

PCT/AU 97/00357

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